

## AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph on page 4, lines 1-4, as follows:

The detector may be attached at different positions on a person's head. Beneficial results have been obtained by positioning the detector over the bony mastoid process behind the ear. Beneficial results have also been obtained when the detector overlies the ~~temperomandibular~~ temporomandibular (jaw) joint.

Please amend the paragraph bridging pages 6 and 7, as follows:

### Structure and Relationship of Parts:

Referring to Fig. 1, apparatus 10 includes a detector 20 which is secured to a person's head 22 by adhesive, adhesive tape or other suitable means. It should be noted that the preferred positioning of detector 20 is over a bony mastoid process 28 behind the person's ear 30 or overlying the person's ~~temperomandibular~~ temporomandibular (jaw) joint 32. Detector 20 is adapted to detect mechanical vibrations in head 22 caused by sudden contact of upper teeth 24 and lower teeth 26. Referring to Fig. 2, detector 20 is provided with a vibration sensor 52, such as an accelerometer or a sensitive microphone. It is preferred that a 3-axis accelerometer be used to maximize the selectivity of the detector to vibrations evoked by tooth clicks. In a preferred embodiment, detector 20 is provided with a power source 50, such as a battery or an electronic circuit, which can receive and store power transmitted electromagnetically. However, it will be understood that a passive device, such as a passive transponder may also be used. The preferred version of detector 20 also incorporates an electronic amplifier 54 that amplifies the fluctuations in voltage produced by the vibration sensor 52 in response to vibrations. Preferably, it is also provided with a filter 55 that selectively attenuates signals corresponding to vibrations unrelated to tooth contact. Referring to Fig. 1, Fig. 2 and

LAW OFFICES OF  
CHRISTENSEN O'CONNOR JOHNSON KINDNESS<sup>PLLC</sup>  
1420 Fifth Avenue  
Suite 2800  
Seattle, Washington 98101  
206.682.8100

Fig. 3, there is also included an electronic controller 40, with power source 60 that responds to certain states of the amplified and filtered vibration sensor signals by transmitting commands to one or more controlled devices, such as muscle stimulator cuff 36 in Fig. 1, other devices and operations exemplified by (but not limited to ) 70, 72 and 74 in Fig. 2 and devices, such as: lights 80, computer 82, radio 84, television 86, door opener 88, automobile 90 in Fig. 3. The controller 40 may be physically separate from detector 20, as shown for example in Figs. 1 and 2. In this case, detector 20 may be connected to controller 40 via physical links such as wire or fibre-optic cables. Alternatively, detector 20 may be equipped with a transmitter 56 that transmits the vibration-related signals 34 via an electromagnetic or acoustic communications method to a receiver 62 that is part of controller 40. The received signal is amplified by a signal amplifier 64 and filter 65. It may be further processed by a logic circuit 66 and an output signal generator 68 to control a plurality of devices 70, 72, 74 as shown in Fig. 1 and Fig. 2 and further elaborated in Fig. 3. Illustrated in Fig. 1, is an application relating to muscle stimulation. The person wears a cuff 36 with an in-built control circuit 40 connected to electrodes 38 within the cuff. As illustrated in Fig. 2, the control circuit 40 includes a radio receiver 62, a signal amplifier and filter 64 and 66. Control circuit 40 may also include a logic circuit 66 to maximize the selected recognition of tooth click related components of the signal and to derive command signals accordingly. The command signals are converted to trains of electrical current pulses by signal generator 68, which are transmitted to the muscles through electrodes 38 to activate muscles in the forearm that move the thumb 42 and fingers 44. The diversity of devices which may be controlled is further illustrated in Fig. 3 and includes as examples lights 80, computers 82, radios 84, television sets 86, electro-mechanically operated doors 88 and automobiles 90.

Please amend the paragraph on page 8, lines 11-19, as follows:

Variations:

As shown in Fig. 3, the device controlled can be a computer 82 or a plurality of other controlled devices 80, 84, 86, 88, 90. Other examples of coding to select between a plurality of devices or operations include double-clicks, multiple clicks, variable-intervals between clicks, and clicks of different amplitudes. Detector 20 could be used to operate a communications device in which coded information is transmitted from the user to another person or persons, i.e. telecommunication. In yet another embodiment the detector 20 and transmitter 56 are in the form of a small encapsulated device implanted under the skin 130 in the vicinity of the skull or ~~temporo-mandibular~~ temporomandibular joint, Fig. 7.

Please amend the paragraph on page 9, lines 1-2, as follows:

~~The embodiments of the invention in which an exclusive property or privilege~~  
What is claimed is ~~are defined as follows:~~

LAW OFFICES OF  
CHRISTENSEN O'CONNOR JOHNSON KINDNESS<sup>PLC</sup>  
1420 Fifth Avenue  
Suite 2800  
Seattle, Washington 98101  
206.682.8100